

## DEVELOPING EMISSIONS-CONTROL EQUIPMENT— EPRI'S ENVIRONMENTAL CONTROL TECHNOLOGY CENTER

### PRIMARY PROJECT PARTNER

**Electric Power Research Institute**  
Palo Alto, CA  
(A nonprofit research institute funded by its members from the electric power industry)

### MAIN SITE

**New York State Electric and Gas Company's Kintigh Station**  
Barker, NY

### TOTAL ESTIMATED COST

**\$17,600,000**

### COST SHARING

<b>DOE</b>	<b>\$2,000,000</b>
<b>Non-DOE</b>	<b>\$15,600,000</b>

### Project Description

The Electric Power Research Institute (EPRI) is the nonprofit research arm of the U.S. electric power industry. With funding from member companies, EPRI currently operates a center for developing environmental control equipment for coal-fired power plants. Formerly known as the High-Sulfur Test Center, it is now called the Environmental Control Technology Center, or ECTC.

The ECTC is recognized as the Nation's largest and most comprehensive facility for the research and development of environmental control technologies for fossil-fired power plants. For nearly 10 years, the ECTC has provided leadership in research, development, demonstration, and optimization of environmental control technologies. Specific research areas include: hazardous air pollutants characterization and control (particularly mercury); conventional and advanced flue gas desulfurization (FGD); post-combustion NO<sub>x</sub> control; fine particulate control; water and by-product management or reuse; and development of innovative processes, equipment, and instrumentation.

The ECTC is extremely flexible and capable of handling a wide range of environmental control research and product development needs. Its environmental control equipment includes three levels of wet FGD systems (bench-scale, 0.4 MW, and 4.0 MW); three particulate collectors (an electrostatic precipitator, a reverse-gas fabric filter, and a pulse-jet fabric filter); a 4.0 MW spray dryer FGD system; and a 1.0 MW selective catalytic reduction (SCR) system. The Center is designed to simulate a wide range of process and equipment designs that can be configured to investigate nearly any environmental control issue.

### Program Goal

Fifty-six percent of U.S. electricity is generated by burning coal, and coal will most likely continue to supply more than half of U.S. electric power well into the next century. But burning coal to generate energy can produce harmful emissions. It is in the Nation's interest to use this plentiful domestic energy supply in a way that minimizes adverse impact on the environment; indeed, tighter standards for U.S. coal-based power plants will take effect in the year 2000. The work being conducted at ECTC contributes to the development and demonstration of environmental control technology to cost-effectively reduce the levels of SO<sub>2</sub>, NO<sub>x</sub>, particulates, and trace elements in power-plant emissions.

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## CONTACT POINTS

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## Project Partner

**NEW YORK STATE ELECTRIC  
AND GAS COMPANY**  
Barker, NY

## Project Benefits

Deregulation of the U.S. electric industry will generate competition among utilities to lower production costs through improved operating efficiency. Utilities are also increasingly faced with regulations regarding various types of waste. The research conducted by the Environmental Control Technology Center will help U.S. utilities to address present and future environmental regulations strategically, as well as to increase efficiency, reliability, and cost-effectiveness.

ECTC-conducted research will continue to play a significant role in developing effective and economical environmental control technologies for coal-fired power plants. Such technologies share the goal of the flue gas clean-up program: to develop and demonstrate a technology base that will allow for the environmentally acceptable use of coal for electricity generation. DOE collaboration with the Electric Power Research Institute (EPRI)—the electric power industry's research organization—helps researchers address the multiple environmental issues facing the power-generation industry, leading to the increasing availability of promising technology.

## Cost Profile (Dollars in Millions)

	Prior Investment	FY95	FY96	FY97	Future Funds
Department of Energy *	\$0.8	\$0.4	\$0.4	\$0.4	—
Private Sector Partners	\$3.9	\$3.9	\$3.9	\$3.9	—

\* Appropriated Funding

## Key Milestones

FY96	FY97	
	Mercury Testing	Additives Testing
Bench-scale testing of mercury-control approaches begins 5/96	Pilot-scale testing of additives for mercury control begins 11/96	Tests completed 6/97